Gem

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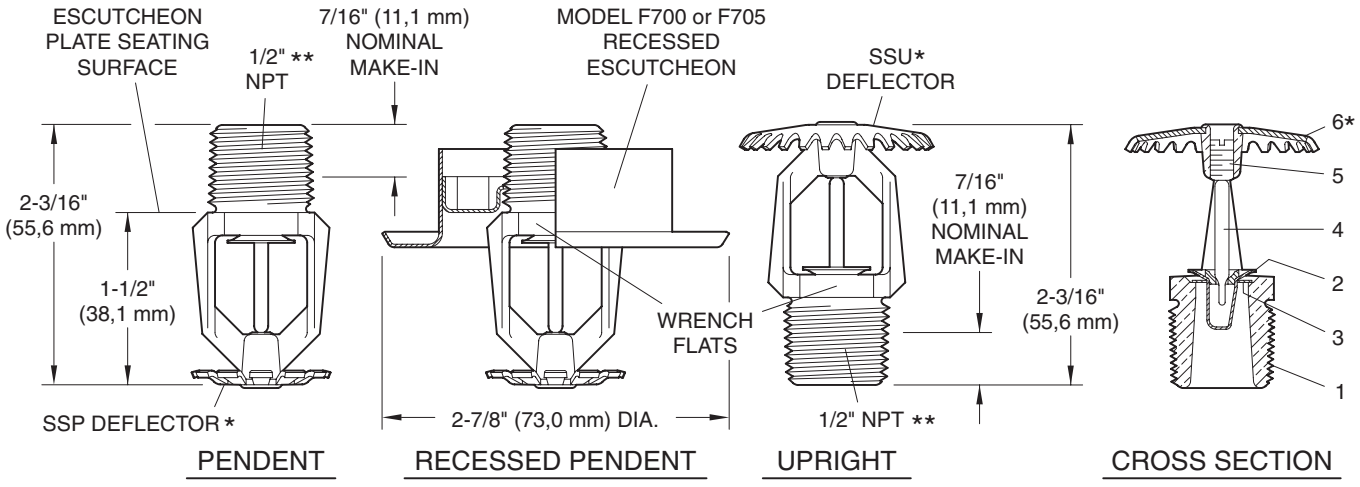
PENDENT, RECESSED PENDENT, AND UPRIGHT SPRINKLERS

UNIVERSAL MODEL A

QUICK RESPONSE, 3 mm BULB TYPE, 5.6 K-FACTOR, 1/2" NPT**



1 - Frame
2 - Button
3 - Gasketed Spring Plate
4 - Bulb
5 - Compression Screw
6 - Deflector

* Temperature rating is indicated on deflector or adjacent to orifice seat on frame.

** Pipe thread connections per ISO 7/1 can be provided on special request.

FIGURE A
5.6 K-FACTOR QUICK RESPONSE MODEL A PENDENT (SIN G7371) AND UPRIGHT (SIN G7370) SPRINKLERS

GENERAL DESCRIPTION

The 5.6 K-Factor Quick Response Universal Model A Pendent, Recessed Pendent, and Upright Sprinklers (Ref. Figure A) are automatic sprinklers of the "quick response" frangible bulb type. They are "standard spray sprinklers" intended for use in fire sprinkler systems designed in accordance with the standard installation rules recognized by the applicable Listing or Approval agency (e.g., UL Listing is based on NFPA 13 requirements). The Pendent, Recessed Pendent, and Upright Sprinklers all produce a hemispherical water distribution pattern below the deflector.

The recessed versions of the Model A Sprinkler are obtained by utilizing the Model A Pendent Sprinkler in combination with either the Model F700 or F705 Recessed Escutcheon (Ref. Figures A and B). The Recessed Escutcheons have a separable two-piece design which allows installation of the sprinklers and pressure testing of the fire protection system, prior to ceiling construction and/or application of a finish coat to the ceiling. They also permit refinishing of a ceiling surface without having to first shut down the fire protection system and remove the sprinklers.

The vertical adjustment provided by the Recessed Escutcheons substantially reduces the accuracy to which the length of fixed pipe drops to the sprinklers must be cut. Also, the Closure has a 1/2 inch (12,7 mm) wide flange which provides ample clearance for covering the mounting hole.

Lead coating is utilized to extend the life of copper alloy sprinklers beyond that which would otherwise be obtained when exposed to corrosive atmospheres. Although lead coated sprinklers have passed the standard corrosion tests of the applicable approval agencies, the testing is not representative of all possible corrosive atmospheres. Consequently, it is recommended that the end user be consulted with respect to the suitability of these corrosion resistant coatings for any given corrosive environment. The effects of ambient temperature, concentration of chemicals, and gas/chemical velocity, should be considered, as a minimum, along with the corrosive nature of the chemical to which the sprinklers will be exposed.

NOTE

The intermediate level version of the Model A Pendent Sprinkler is obtained by utilizing the Model A Pendent Sprinkler (SIN G7371) in combination with the Model Q-67 Shield described in Technical Data Sheet TD500M.

APPROVALS AND STANDARDS

Laboratory listings and approvals for the 5.6 K-Factor Model A Pendent, Recessed Pendent, and Upright Sprinklers are given in Table A.

WARNING

The 5.6 K-Factor Model A Pendent, Recessed Pendent, and Upright Sprinklers described herein must be installed and maintained in compliance with this document, as well as applicable standards of the National Fire Protection Association, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the integrity of these devices.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. The installing contractor or

TYPE	TEMPERATURE RATING	BULB LIQUID COLOR	SPRINKLER FINISH			
			NATURAL BRASS	CHROME PLATED	POLYESTER COATED (All Colors)	LEAD COATED
PENDENT (G7371) and UPRIGHT (G7370)	135°F/57°C	Orange	1, 2, 3, 4, 5, 6,			1, 2, 3
	155°F/68°C	Red				
	175°F/79°C	Yellow				
	200°F/93°C	Green				
	286°F/141°C	Blue				
RECESSED PENDENT (G7371) WITH F700	135°F/57°C	Orange	1, 2, 5, 6, 7			N/A
	155°F/68°C	Red				
	175°F/79°C	Yellow				
	200°F/93°C	Green				
RECESSED PENDENT (G7371) WITH F705	135°F/57°C	Orange	1, 2, 3, 5, 6, 7		1, 2, 5, 6, 7	N/A
	155°F/68°C	Red				
	175°F/79°C	Yellow				
	200°F/93°C	Green				

NOTES:
1. Listed by Underwriters Laboratories, Inc. as Quick Response Sprinklers.
2. Listed by Underwriters' Laboratories of Canada as Quick Response Sprinklers.
3. Approved by Factory Mutual Research Corporation as Quick Response Sprinklers for use in Light and Ordinary Hazard (Groups 1 and 2) Occupancies. (FM limits quick response sprinklers to wet pipe sprinkler systems and preaction systems qualifying as wet pipe sprinkler systems.)
4. Approved by the Loss Prevention Council (United Kingdom) as Quick Response sprinklers.
5. Approved by the Scientific Services Laboratory (Australia) as Quick Response Sprinklers.
6. Accepted by the City of New York under MEA 241-94-E as Quick Response Sprinklers.
7. Approved by the Loss Prevention Council (United Kingdom). The LPC does not rate the sensitivity of recessed sprinklers.

N/A: Not Available

TABLE A
LABORATORY LISTINGS AND APPROVALS

manufacturer should be contacted relative to any questions.

Installation of Model A Pendent Sprinklers in recessed escutcheons other than the F700 or F705 will void all sprinkler warranties, as well as possibly void the sprinkler's Approvals and/or Listings.

TECHNICAL DATA

The 5.6 K-Factor Model A Pendent, Recessed Pendent, and Upright Sprinklers are rated for use at a maximum service pressure of 175 psi (12,1 bar) and they are available in the temperature ratings and finishes indicated in Table A.

The nominal flow "Q" in GPM (LPM) is determined by the following formula:

$$Q = K\sqrt{p}$$

where the nominal discharge coefficient "K" equals 5.6 (80,7) and "p" equals the residual flowing pressure in psi (bar).

The Frame of the Model A Sprinkler (Ref. Figure A), is a dezincification resistant bronze, and the Deflector is brass. The Button and Compression Screw are bronze. The Gasketed Spring Plate consists of a beryllium nickel disc spring that is sealed on both its inside and outside faces with a Teflon† gasket. The quick response Model A Sprinklers utilize a 3 mm diameter frangible bulb. Table A indicates the bulb liquid color as a function of temperature rating.

NOTES

Inquiries concerning the appropriateness of lead coated sprinklers for a given corrosive environment should be submitted to the attention of the Technical Services Department.

Lead coated sprinklers are not suitable for use in open sprinkler applications.

INSTALLATION

NOTES

Do not install any bulb sprinkler if the bulb is cracked or there is a loss of liquid from the bulb. With the sprinkler held horizontal, a small air bubble should be present. The diameter of the air bubble is approximately 1/16 inch (1,6 mm) for the 135°F/57°C to 3/32 inch (2,4 mm) for the 286°F/141°C temperature rating.

A leak tight 1/2 inch NPT sprinkler joint should be obtained with a torque of 7 to 14 ft.lbs. (9,5 to 19,0 Nm). A maximum of 21 ft. lbs. (28,5 Nm) of torque may be used to install sprinklers with 1/2 NPT connections. Higher levels of torque may distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

When an escutcheon plate is utilized, do not attempt to make-up for insufficient escutcheon plate adjustment by under- or over-tightening the sprinkler. Readjust the position of the sprinkler fitting to suit.

The **Model A Pendent and Upright Sprinklers** must be installed in accordance with the following instructions.

Step 1. Pendent sprinklers are to be installed on the pendent position, and upright sprinklers are to be installed in the upright position.

Step 2. With pipe thread sealant applied to the pipe threads, hand tighten the sprinkler into the sprinkler fitting.

Step 3. Tighten the sprinkler into the sprinkler fitting using only the W-Type 6 Sprinkler Wrench (Ref. Figure C). With reference to Figure A, the W-Type 6 Sprinkler Wrench is to be applied to the wrench flats.

The **Model A Recessed Pendent Sprinklers** must be installed in accordance with the following instructions.

† DuPont Registered Trademark

MODEL F700

FULLY RECESSED DIMENSIONS†
Up to 1/2 inch adjustment from minimum 1/4 inch to maximum 3/4 inch recessed position.

Dim.	Inches	MM
A-	5/8±1/8††	15,9±3,2
B-Min.	3/4	19,1
B-Nom.	1	25,4
B-Max.	1-1/4	31,8
C-Min.	1/4	6,4
C-Max.	3/4	19,1

HIGH ADJUSTMENT DIMENSIONS
Up to 3/4 inch adjustment from the flush ceiling position to 3/4 inch recessed position.

Dim.	Inches	MM
A-	1/2±1/4††	12,7±6,4
B-Min.	3/4	19,1
B-Nom.	1-1/8	28,6
B-Max.	1-1/2	38,1
C-Min.	FLUSH	—
C-Max.	3/4	19,1

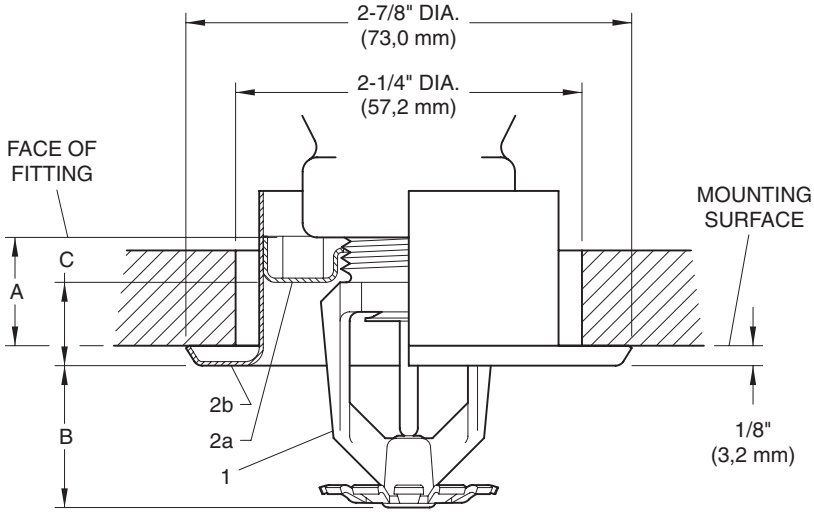
MODEL F705

FULLY RECESSED DIMENSIONS†
Up to 1/4 inch adjustment from minimum 1/4 inch to maximum 1/2 inch recessed position.

Dim.	Inches	MM
A-	1/2††	12,7
B-Min.	1	25,4
B-Nom.	1-1/8	28,6
B-Max.	1-1/4	31,8
C-Min.	1/4	6,4
C-Max.	1/2	12,7

HIGH ADJUSTMENT DIMENSIONS
Up to 1/2 inch adjustment from the flush ceiling position to 1/2 inch recessed position.

Dim.	Inches	MM
A-	3/8±1/8††	9,5±3,2
B-Min.	1	25,4
B-Nom.	1-1/4	31,8
B-Max.	1-1/2	38,1
C-Min.	FLUSH	—
C-Max.	1/2	12.7



† For best overall appearance.

†† Remaining 1/4 inch (6,4 mm) of adjustment can be used to compensate for variations in sprinkler make-in and fitting take-out.

1- Model A Pendent Sprinkler
2- Model F700 or F705 Recessed Escutcheon
a- Mounting Plate
b- Closure

FIGURE B
MODEL A RECESSED PENDENT SPRINKLER ASSEMBLY WITH TWO-PIECE MODEL F700 AND F705 RECESSED ESCUTCHEONS

Step A. Verify that the face of the sprinkler fitting is within the proper range of distance which can be accommodated by the Model F700 or F705 Recessed Escutcheon.

For best overall appearance, use Dimension "A" indicated under the "Fully Recessed Dimensions" heading of Figure B. Otherwise, use Dimension "A" under the "High Adjustment Dimensions" heading. In either case, the remaining adjustment can be used to compensate for the possible manufacturing variations in take-out of the fitting, as well as in the make-in of the sprinklers (as permitted by ANSI B1.20.1).

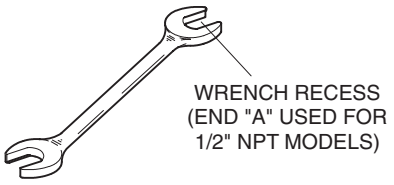


FIGURE C
W-TYPE 6 SPRINKLER WRENCH

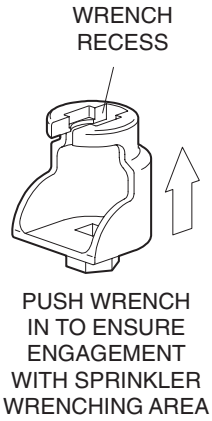


FIGURE D
W-TYPE 7 RECESSED SPRINKLER WRENCH

Step B. After installing the F700 or F705 Mounting Plate over the sprinkler threads, hand tighten the sprinkler into the sprinkler fitting.

Step C. Tighten the sprinkler into the sprinkler fitting using only the W-Type 7 Recessed Sprinkler Wrench (Ref. Figure D). With reference to Figure A, the W-Type 7 Recessed Sprinkler Wrench is to be applied to the sprinkler wrench flats.

Step D. After the ceiling has been installed or the finish coat has been applied, slide on the F700 or F705 Closure over the Model A Sprinkler and push the Closure over the Mounting Plate until its flange comes in contact with the ceiling.

CARE AND MAINTENANCE

The Model A Sprinklers must be maintained and serviced in accordance with the following instructions:

NOTES

Before closing a fire protection system control valve for maintenance work on the fire protection system which it controls, permission to shut down the affected fire protection system must be obtained from the proper authorities and all personnel who may be affected by this action must be notified.

Absence of an escutcheon, which is used to cover a clearance hole, may delay the time to sprinkler operation in a fire situation.

Sprinklers which are found to be leak-

ing or exhibiting visible signs of corrosion must be replaced.

Automatic sprinklers must never be shipped or stored where their temperatures will exceed 100°F/38°C and they must never be painted, plated, coated or otherwise altered after leaving the factory. Modified sprinklers must be replaced. Sprinklers that have been exposed to corrosive products of combustion, but have not operated, should be replaced if they cannot be completely cleaned by wiping the sprinkler with a cloth or by brushing it with a soft bristle brush.

Care must be exercised to avoid damage to the sprinklers — before, during, and after installation. Sprinklers damaged by dropping, striking, wrench twist/slippage, or the like, must be replaced. Also, replace any sprinkler that has a cracked bulb or that has lost liquid from its bulb (ref. Installation Section Note).

Frequent visual inspections are recommended to be initially performed for lead coated sprinklers, after the installation has been completed, to verify the long term potential integrity of the sprinkler coating. Thereafter, annual inspections per NFPA 25 should suffice; however, instead of inspecting from the floor level, a random sampling of close-up visual inspections should be made, so as to better determine the exact sprinkler condition and the long term integrity of the lead coating, as it may be affected by the corrosive conditions present.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of the National Fire Protection Association (e.g., NFPA 25), in addition to the standards of any other authorities having jurisdiction. The installing contractor or sprinkler manufacturer should be contacted relative to any questions.

It is recommended that automatic sprinkler systems be inspected, tested, and maintained by a qualified Inspection Service.

LIMITED WARRANTY

Products manufactured by Tyco Fire Products are warranted solely to the original Buyer for ten (10) years against defects in material and workmanship when paid for and properly installed and maintained under normal use and service. This warranty will expire ten (10) years from date of shipment by Tyco Fire Products. No warranty is given for products or components manufactured by companies not affiliated by ownership with Tyco Fire Products or for products and components which have been subject to misuse, improper installation, corrosion, or which have not been installed, maintained, modified or repaired in accordance with applicable Standards of the National Fire Protection Association, and/or the standards of any other Authorities Having Jurisdiction. Materials found by Tyco Fire Products to be defective shall be either repaired or replaced, at Tyco Fire Products' sole option. Tyco Fire Products neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. Tyco Fire Products shall not be responsible for sprinkler system design errors or inaccurate or incomplete information supplied by Buyer or Buyer's representatives.

IN NO EVENT SHALL TYCO FIRE PRODUCTS BE LIABLE, IN CONTRACT, TORT, STRICT LIABILITY OR UNDER ANY OTHER LEGAL THEORY, FOR INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LABOR CHARGES, REGARDLESS OF WHETHER TYCO FIRE PRODUCTS WAS INFORMED ABOUT THE POSSIBILITY OF SUCH DAMAGES, AND IN NO EVENT SHALL TYCO FIRE PRODUCTS' LIABILITY EXCEED AN AMOUNT EQUAL TO THE SALES PRICE.

THE FOREGOING WARRANTY IS MADE IN LIEU OF ANY AND ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

PSN 57 — XXX — X — XXX

TYPE	
371	QR PENDENT
370	QR UPRIGHT

SPRINKLER FINISH	
1	NATURAL BRASS
4	WHITE POLYESTER
9	CHROME PLATED
7	LEAD COATED

TEMPERATURE RATING	
135	135°F/57°C
155	155°F/68°C
175	175°F/79°C
200	200°F/93°C
286	286°F/141°C

TABLE B
PRODUCT SYMBOL NUMBER SELECTION
5.6 K-FACTOR MODEL A PENDENT AND UPRIGHT SPRINKLERS
WITH 1/2 INCH NPT CONNECTIONS

ORDERING PROCEDURE

A Product Symbol Number (PSN) is not specified when ordering sprinklers with thread connections per ISO 7/1.

Contact your local distributor for availability.

Sprinkler Assemblies:
Specify: 5.6 K-Factor, (specify temperature rating), Quick Response Model A (specify Pendent or Upright) Sprinkler with (specify type of finish or coating), PSN (specify from Table B).

"Special Order"
Sprinkler Assemblies with ISO 7/1 Thread Connections:
Specify: 5.6 K-Factor, (specify temperature rating), Quick Response Model A (specify Pendent or Upright) Sprinkler with (specify type of finish or coating) and with thread connection per ISO 7/1.

Recessed Escutcheon:
Specify: 1/2" (15 mm) Model (specify) Recessed Escutcheon with (specify finish), PSN (specify).

1/2" F700 Chrome . . . . . PSN 56-701-9-010
1/2" F700 White . . . . . PSN 56-701-4-010
1/2" F705 Chrome . . . . . PSN 56-705-9-010
1/2" F705 White . . . . . PSN 56-705-4-010

Sprinkler Wrench:
Specify: W-Type 6 Sprinkler Wrench, PSN 56-000-6-387.

Specify: W-Type 7 Sprinkler Wrench, PSN 56-850-4-001.